WHAT IS CLAIMED IS:

1.   A scan diagnosis system for testing and diagnosing a device-under-test including:

a semiconductor tester adapted for coupling to the device-under-test and operative to generate pattern signals in the ATE domain to test the device-under-test and produce test output data in the ATE domain;

an ATPG diagnosis tool operative to generate ATPG pattern data and ATPG results data in the ATPG domain; and

a translator to effect automatic correlation of data between the ATPG domain and the ATE domain to allow data communication between the tester and the tool.

2.   A scan diagnosis system according to claim 1 wherein the translator includes:

a pattern translator to convert ATPG pattern data into ATE pattern data;

a result translator to convert ATE output data into ATPG tool input data; and

a mapping generator for correlating the pattern data and the results data between the ATPG and the ATE domains.

3.   A scan diagnosis system according to claim 1 and further including:

a graphical user interface generator for receiving failure scan chain data identifying failed scan chains from the test and diagnosis engine and generating graphical representations of the failed scan chains; and

a display device coupled to receive the graphical representations from the graphical user interface, the display device operative to display the graphical representations of the failed scan chains.

4.   A scan diagnosis system including:

a test and diagnosis engine including a semiconductor tester and a scan diagnosis tool;

a graphical user interface generator for receiving failure scan chain data identifying failed scan chains from the test and diagnosis engine and generating graphical representations of the failed scan chains; and

a display device coupled to receive the graphical representations from the graphical user interface, the display device operative to display the graphical representations of the failed scan chains.

5.   A scan diagnosis system according to claim 4 wherein the semiconductor tester is operative to generate pattern signals in the ATE domain to test a device-under-test and produce test output data in the ATE domain, and the diagnosis tool is operative to generate ATPG pattern data and ATPG results data in the ATPG domain, the scan diagnosis system further including:

a translator to effect automatic correlation of data between the ATPG domain and the ATE domain to allow data communication between the tester and the tool.

6.   A scan diagnosis system according to claim 5 wherein the translator includes:

a pattern translator to convert ATPG pattern data into ATE pattern data;

a result translator to convert ATE output data into ATPG tool input data; and

a mapping generator for correlating the pattern data and the results data between the ATPG and the ATE domains.

7.   A scan diagnosis system including:

        semiconductor tester means for generating pattern signals in an ATE domain to test a device-under-test and producing test output data in the ATE domain;

        diagnosis tool means for generating ATPG pattern data and ATPG results data in an ATPG domain; and

        means for automatically correlating data between the ATPG domain and the ATE domain to allow data communication between the tester means and the tool means.

8.   A scan diagnosis system according to claim 7 wherein the test output data includes failed scan chain data, the scan diagnosis system further including:

        means for graphically displaying the failed scan chain data.

9.   A computer-readable medium having stored thereon sequences of instructions which, when executed, cause one or more electronic systems to:

        test a device-under-test with test pattern data in a scan format;

        capture scan failure data associated with failed scan chains from the device-under-test;

        display a portion of the scan chains including the captured failure data; and

        diagnose the scan failure data with a diagnosis tool.

10.   A method comprising:

        testing a device-under-test with test pattern data in a scan format;

        capturing scan failure data associated with failed scan chains from the device-under-test;

        displaying a portion of the scan chains including the captured failure data; and

        diagnosing the scan failure data with a diagnosis tool to produce diagnosis results data.

11.   A method according to claim 10 wherein the step of testing includes the step:

        directly communicating with the diagnosis tool.

12. A method according to claim 10 wherein the step of testing includes the step:

generating ATPG pattern data in the ATPG domain with the diagnosis tool; and

automatically translating the ATPG pattern data into ATE test pattern data.

13. A method according to claim 10 wherein the step of capturing includes the step:

accumulating multiple sets of scan failure data.

14. A method according to claim 10 wherein the step of displaying includes:

displaying textual/tabular scan fail data.

15. A method according to claim 10 wherein the step of displaying includes:

displaying graphical scan fail data.

16. A method according to claim 10 and further including the step: displaying the diagnosis results data.

17. A method according to claim 16 wherein the step of displaying includes:

displaying textual/tabular diagnosis results data.

18. A method according to claim 16 wherein the step of displaying includes:

displaying graphical diagnosis results data.

19. A method according to claim 13 wherein the step of diagnosing includes the step:

automatically invoking the diagnosis tool on selected scan failure data sets.

20.   A method according to claim 13 wherein the step of diagnosing includes the step:

generating ATPG pattern data in the ATPG domain with the diagnosis tool; and

5   automatically translating the ATE output test data into ATPG data; and generating ATPG input diagnosis tool data.

21.   A method according to claim 13 wherein the step of diagnosing includes the step:

accumulating multiple sets of diagnosis results data.

22.   A computer-readable medium having stored thereon sequences of instructions which, when executed, cause one or more electronic systems to:

generate pattern signals in the ATE domain with a semiconductor tester to test a device-under-test and produce test output data in the ATE domain;

5   generate ATPG pattern data and ATPG results data in the ATPG domain with an ATPG diagnosis tool; and

automatically correlate data between the ATPG domain and the ATE domain with a translator to allow data communication between the tester and the tool.

23.   A method comprising:

generating pattern signals in the ATE domain with a semiconductor tester to test a device-under-test and produce test output data in the ATE domain;

generating ATPG pattern data and ATPG results data in the ATPG domain with an ATPG diagnosis tool; and

5   domain with an ATPG diagnosis tool; and

automatically correlating data between the ATPG domain and the ATE domain with a translator to allow data communication between the tester and the tool.

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